

ABSTRACT

AIM

To compare sensory functions and optical coherence tomography parameters between the normal eye and the amblyopic eye in children affected by anisometropic amblyopia and to identify predictors of success for occlusion therapy.

PATIENTS AND METHODS

This study was a prospective, interventional study performed at Institute of Ophthalmology, Joseph Eye Hospital (IOJEH), Trichy, from December 2013 to May 2015. 30 patients who had anisometropic amblyopia (16 females and 14 males, mean age 12.4 ± 4.9 years) despite spectacle correction for a month were included in the study. These patients underwent recording of visual acuity at 4m distance and near with 'LogMAR chart', contrast sensitivity using 'Leas contrast sensitivity chart', color vision using 'online Farnsworth D-15 color arrangement test', stereopsis with 'TNO' cards, accommodative amplitudes and near point of accommodation by the 'RAF' ruler, accommodative facility by '+2.00/-2.00 D sphere flipper' and dynamic retinoscopy with 'streak retinoscopy'. OCT parameters were assessed by spectral domain CirrusTM OCT machine.

Occlusion therapy was instituted in these patients – 6 hours for mild to moderate amblyopia and full time for severe amblyopia. Out of 30 patients, 20 patients reviewed at 6th month follow-up visit.

RESULTS

Patients had significant differences between the amblyopic eye and the normal eye in visual functions such as contrast sensitivity and accommodation; stereopsis was also affected in these patients. Color vision and OCT parameters did not differ significantly between amblyopic eyes and normal eyes.

Following spectacle correction, occlusion therapy aided in visual acuity improvement in amblyopic eyes. Younger the age, lower the degree of anisometropia, lower the spherical equivalent value in the amblyopic eye, good stereopsis and contrast sensitivity values at presentation and compliance to patching were found to be determinants of successful outcomes of occlusion therapy. However, accommodation, color vision and OCT parameters were not found to influence the outcomes of occlusion therapy.

CONCLUSION

The current study highlights the importance of early detection of anisometropic amblyopia to attain better final visual outcomes. Knowing these predictive factors, will enable the treating ophthalmologist in choosing between the appropriate modes of treatment, duration of patching, scheduling review visit, and counselling the patients and parents accordingly.

Keywords : Anisometropic amblyopia, occlusion therapy.